

REMARKS

Claims 1-3 are pending in the application. Claims 1-2, 4-6, 10, 12, and 15 have been amended. No new matter has been introduced by the amendment.

Claim 2 has been amended to remove the multiple dependency.

Rejection Under 35 U.S.C. § 103(a)

Claims 1-15 have been rejected over De in view of Buchwalter et al. This rejection is overcome in view of the amendment of Claims 1 and 10 together with the following remarks.

Claim 1, as amended, recites a method of processing a workpiece that includes fastening a workpiece to a work carrier by means of a solid applied in liquefied form. The work carrier comprises a porous material that includes a plurality of pores where a portion of the pores are interconnected. The plurality of pores in the work carrier are configured to accommodate a portion of the liquefied solid upon application of a vacuum pressure to the work carrier. The applicant respectfully asserts that the cited prior art does not suggest or disclose their claimed method either individually or in combination.

De discloses a carrier (for example 406) to which a semi-conductor wafer (402) is affixed by means of an adhesive (404). (See Col. 5, ll. 44-53). The carrier (406) includes a plurality of through holes (428). The through holes allow solvent to contact and dissolve the adhesive (404) during demounting of wafer (402) from the carrier (406). (See Col. 5, ll. 62-67, Col. 6, ll. 1-3). In operation, the solvent flows through the through holes (428) and attacks the adhesive from the backside of the wafer (402). The action of the solvent removes the adhesive (404) from the carrier-wafer interface as the assembly comes under contact with the solvent. (See Col. 6, ll. 24-34). Accordingly, De fails to suggest or disclose a work carrier that includes a plurality of pores at least a portion of which are interconnected, as acknowledged on page 2 of the instant Office Action. Further, De fails to suggest or disclose pores that are configured to accommodate a portion of a liquefied solid upon application of vacuum pressure to the work carrier. In contrast, De discloses a carrier having pores that act as conduits for a solvent that is delivered through the pores to dissolve the adhesive at the carrier-wafer interface.

The addition of Buchwalter et al. does not overcome the deficiencies of De. Buchwalter et al. disclose a process in which a transfer plate (404) is brought into contact with a photoresist layer (402). (See para. 0052). Heat, pressure, or solvent vapors are employed because the photo resist layer (402) to adhere to the transfer plate (404). Although Buchwalter et al. disclose that the transfer plate (404) may be porous to improve adhesion to the photoresist layer (402), there is no suggestion that the work carrier have pores in which at least a portion of the pores are interconnected. Further, there is no suggestion that the pores be configured to accommodate a liquefied solid upon application of vacuum pressure to the work carrier. Accordingly, neither Buchwalter et al. nor De suggest or disclose the applicants' claim method of processing a workpiece.

Claims 2-9 are allowable in view of their direct or indirect dependence from claim 1. Claim 10 recites a work carrier for processing a workpiece. The work carrier includes a porous material having a plurality of pores at least a portion of which are interconnected. Further, the plurality of pores are configured to accommodate a portion of the liquefied sold upon application of vacuum pressure to the work carrier. The applicants respectfully assert that claim 10 is allowable in view of the applicants' foregoing remarks pertaining to the cited references.

Claim 11 is allowable in view of its dependence from claim 10.

Claims 12-15 are allowable in view of their direct or indirect dependence from claim 1.

Claims 16-23 have been rejected over De in view of Buchwalter et al., and further in view of Hiyamizu et al. This rejection is overcome in view of the amendment of claims 1 and 10 together with the following remarks.

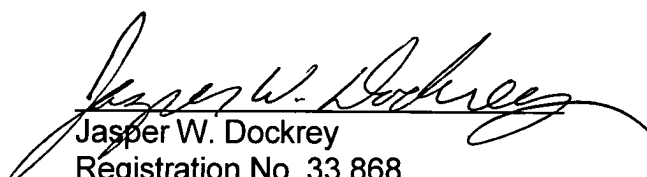
The applicants foregoing remarks with respect to De and Buchwalter et al. are incorporated by reference herein. The applicants respectfully assert that the addition of Hiyamizu et al. does not overcome the deficiencies of De and Buchwalter et al. Hiyamizu et al. disclose a suction head made of thermoplastic resin. The suction head (4) is fabricated such that the thermoplastic resin is porous. The suction head (4) is mounted on and adhesively bonded to the upper surface (6) of a metal chuck base (1). (See Col. 2, ll. 31-39). Hiyamizu et al. further disclose that the pores are receptive to

the adhesive and that the infiltration of the adhesive can be controlled by adequately selecting the type and viscosity of adhesive, the type of thermoplastic resin, and the characteristics of the resin, such as viscosity and pour diameter. (See Col. 3, ll. 21-30).

The applicants respectfully assert that although Hiyamizu et al. disclose a porous plastic body, there is no suggestion by Hiyamizu et al. that a work carrier accommodate the fastening of a workpiece to the work carrier by means of a solid that is applied in liquefied form. Further, there is no suggestion by Hiyamizu et al. that the work carrier included a plurality of pores configured to accommodate a portion of the liquefied solid. In particular, Hiyamizu et al. do not suggest or disclose the use of an adhesive for attaching a workpiece to a work carrier. Instead, Hiyamizu et al. disclose the use of the adhesive to attach the work carrier to the chuck base (1) and to form air-impermeable protecting layers (5) on the suction head (4). (See Col. 3, ll. 66-67). Accordingly, claims 16-21 are allowable in view of their dependence upon claim 1. Further, claims 22-23 are allowable in view of their dependence on claim 10.

The applicants have made a novel and non-obvious contribution to the art of semi-conductor fabrication technology. The claims at issue distinguish over the cited references and are in condition for allowance. Accordingly, such allowance is now earnestly requested.

Respectfully submitted,


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